# SPECIAL AIRWORTHINESS INFORMATION BULLETIN

Aircraft Certification Service
Washington, DC

U.S. Department of Transportation

**Federal Aviation Administration**

SW-05-81
*August 17, 2005*

**http://www.faa.gov/aircraft/safety/alerts/SAIB**

***This is information only. Recommendations aren't mandatory.***

## Introduction

This Special Airworthiness Information Bulletin alerts you, owners, operators, pilots, and mechanics, of **ENSTROM Helicopter Corporation Model 480 and 480B helicopters,** of possible ground resonance.

## Background

On August 5, 2005, in Goshen, Indiana, an Enstrom 480 helicopter encountered ground resonance after landing, causing the pilot and front seat passenger to be thrown from the helicopter, which was destroyed.

We are still investigating the accident. The preliminary information indicates that a cracked transmission mount strut, the elastomeric damper damage, or improperly serviced oleo struts could have resulted in ground resonance.

ENSTROM issued Immediate Action Required Letter (I/L), dated August 5, 2005 (attached), as a result of the accident. The crashed Enstrom 480 model was equipped with an elastomeric damper, part number (P/N) J237172.

Enstrom's I/L requires that you remove certain elastomeric dampers from service immediately, until they complete further investigation. If the helicopter has previously experienced ground resonance, you must ground the helicopter until you replace certain elastomeric dampers with airworthy hydraulic dampers. Enstrom doesn't permit ferry flights.

## Recommendation

We recommend that you take immediate action if you encounter ground resonance. When the RPM is near operational speed, such as during landing, IMMEDIATELY pull the aircraft to a hover. After the vibrations have dampened out, perform a hovering autorotation. If you encounter ground resonance at low rotor RPM, such as when the rotor RPM is being increased from idle, IMMEDIATELY close the throttle.

We also recommend the following actions before further flight:

- Per the I/L, remove any elastomeric damper, P/NJ237172, and replace with an airworthy hydraulic damper, P/N 28-14375-10.
- Inspect the transmission mount for any crack.
- Inspect the elastomeric damper for any visible deformation and cracking.
- Inspect each oleo struts prior to take off for proper servicing.

If any owner or operator of ENSTROM Model 480 and 480B helicopters experiences ground resonance or detect any damage described above, please contact us immediately at:

- FAA Chicago Aircraft Certification Office, Mr. Shawn Malekpour at (847) 294.7837
- FAA Rotorcraft Directorate, Mr. Uday Garadi, at (817) 222.5123.

*Note: We may issue further required actions when more information is available.*

**For Further Information Contact**

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August 5, 2005

# IMMEDIATE ACTION REQUIRED

## TO ALL OWNERS AND OPERATORS OF ELASTOMERIC DAMPER EQUIPPED ENSTROM 480 SERIES HELICOPTERS

An Enstrom helicopter, equipped with an elastomeric damper, has experienced ground resonance. The aircraft had previously experienced ground resonance, which was attributed to improperly serviced oleo struts. During a later flight, the aircraft encountered ground resonance and was destroyed. During subsequent conversations with the damper manufacturer, it seems that the first encounter may have reduced the damper's stiffness, thus reducing its ability to prevent ground resonance.

Enstrom requires that the elastomeric dampers be removed from service immediately, until more is learned about the situation. If the aircraft has previously experienced ground resonance, it must be grounded until the dampers are replaced with airworthy hydraulic dampers; no ferry flights are permitted.

If ground resonance is encountered, immediate pilot action is necessary. If resonance is encountered at low rotor RPM, such as when the rotor RPM is being increased from idle, IMMEDIATELY close the throttle. If resonance is encountered when the rotor RPM is near operational speed, such as during landing, IMMEDIATLEY pull the aircraft to a hover. After the vibrations have dampened out, perform a hovering autorotation.

Sincerely,
Enstrom Helicopter Inc.

Jerry M. Mullins
President and CEO

William E. Taylor, Jr.
Director of Engineering